2006 Crappie Creel Limit Reduction Proposal

In August the Tennessee Wildlife Resources Agency proposed to reduce the crappie creel limit from 30 per day to 15 on many of the state's reservoirs. This proposal was based on data collected by TWRA biologists over the last 25 years and concerns expressed by crappie anglers in recent years.

Since the mid 1990s TWRA biologists have documented a steady decrease in catch and harvest rates from what were historically some of the best crappie producing reservoirs in middle and east Tennessee. The figure below shows the estimated white crappie harvest for Chickamauga and Watts Bar reservoirs. These are typical examples of white crappie harvest trends that many of Tennessee's fisheries are experiencing.

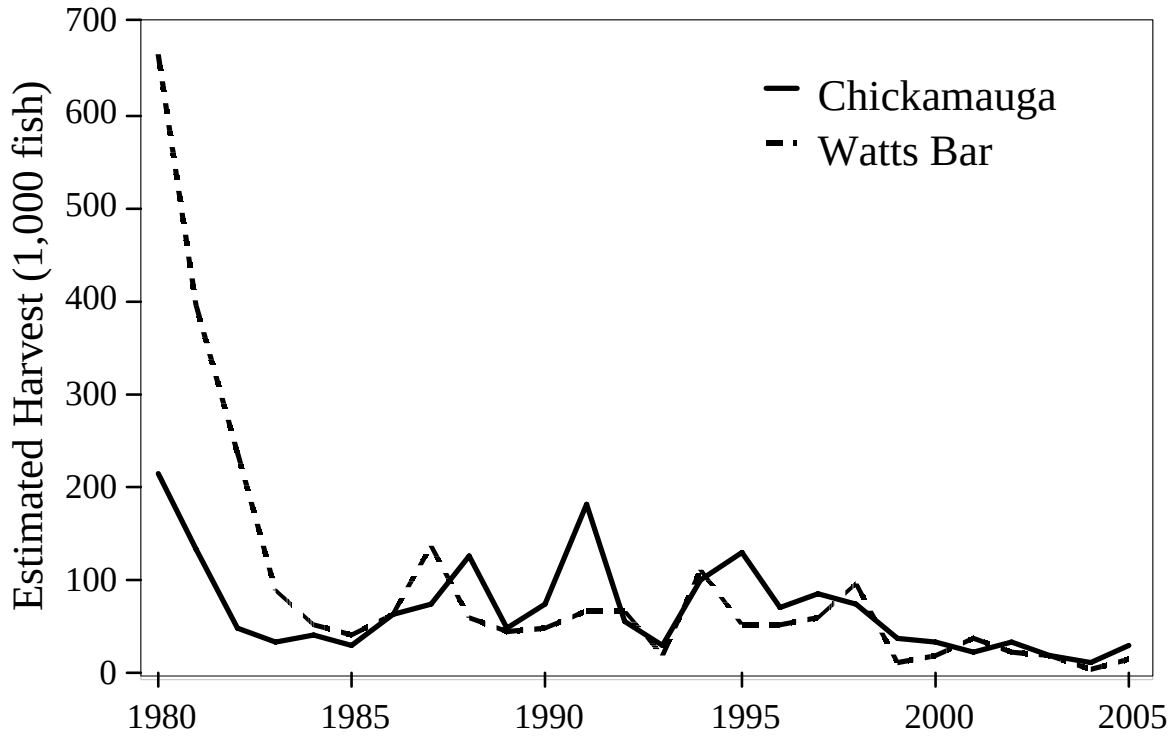

Figure 1. Chickamauga (solid line) and Watts Bar (dashed line) white crappie harvest estimated from annual creel survey data each fiscal year since 1980.

"Fishing pressure is higher and anglers are more efficient due to innovations in technology and communication" says Mike Jolley, Region 3 Biologist for TWRA. In general, most anglers realize this and that is why many have been requesting more stringent regulations for crappie. Since 2000, TWRA has received numerous requests from anglers to reduce the crappie creel limit. Because of these requests, for the last two years TWRA creel clerks have been asking crappie anglers on Chickamauga and Watts Bar reservoirs if they would "support going to a 15 crappie per day creel limit." "A total of 2,204 crappie anglers were interviewed and 90% said they would support a 15 per day creel limit" says Jolley. Surveys conducted on Tims Ford,

Woods, and Normandy reservoirs had similarly high support (66-77%) for a creel limit reduction.

The crappie fisheries in middle and east Tennessee typically exhibit boom-bust cycles because water levels during the spawn fluctuate from year to year. One of the major reasons that TWRA would like to see the creel limit reduced is because biologists fear that the "boom" years may be more infrequent in years to come. "Most of these reservoirs have less habitat and lower fertility than they have had in the past" says Jolley. "Furthermore, the Tennessee Valley Authority's new Reservoir Operations Study has called for main stem reservoirs, such as Watts Bar and Chickamauga, to be filled a month later than normal, May 15 instead of April 15." This should be important to crappie anglers because this is the peak spawning period for crappie. Studies have linked pre-spawn filling of reservoirs and stable water conditions during the spawn with successful crappie spawns. Additionally, much of the preferred crappie spawning habitat will not be available during the spawn because it will be "high and dry". These changes have TWRA biologists concerned because they are uncertain of the effects this will have on crappie recruitment. When conditions are not right during the spawn, weak (poor recruitment) or missing (failed recruitment) year classes can result. In recent years failed recruitment has been documented on several middle and east Tennessee reservoirs. Biologists suspect that complete recruitment failure did not occur in the past when population levels were higher.

The reduced creel limits will not apply to west Tennessee fisheries like Kentucky Reservoir and Reelfoot Lake. These fisheries normally have better recruitment than east Tennessee reservoirs. "We index crappie recruitment by counting the number of young-of-year crappie, shorter than 5 inches, that we catch in our trap net surveys each fall" says George Scholten, Reservoir Fisheries Coordinator for TWRA. "Recruitment in our west Tennessee reservoirs is more consistent and normally higher than recruitment in middle and east Tennessee reservoirs." The table below compares recruitment during the last 5 seasons in two east and two west Tennessee crappie fisheries.

Table 1. Substock (crappie shorter than 5") catch per unit of effort in four Tennessee white crappie fisheries.

	Kentucky	Reelfoot	Chickamauga	Watts Bar
2001	8.1	16.8	0.1	0.5
2002	3.4	5.9	0.1	1.3
2003	7.1	7.0	0.5	12.8
2004	4.1	2.2	0.5	2.2
2005	5.1	4.4	0.1	0.2
Average	5.6	7.3	0.2	3.4

In east Tennessee, when crappie recruitment is high, fishing is normally good three years later. "The problem is that recruitment is inconsistent in east Tennessee. When we get a good year class of crappie, it can be cropped-off efficiently by a small number of anglers if liberal creel limits are in place" says Jolley. According to TWRA creel surveys, the proposed creel limit will affect relatively few anglers because only a small proportion of anglers are routinely harvesting

over 15 crappie per day. "On reservoirs like Watts Bar and Chickamauga, the creel limit is expected to conserve around 3% of the harvest each year" says Bill Reeves, Chief of Fisheries for TWRA. "With a reduced creel limit, the conserved crappie will be more equitably distributed amongst anglers and trips. This should help provide more anglers with more quality fishing experiences."

By conserving some fish each year, there will also be more spawning adults during those years when the conditions are "right" during the spawn. "With more spawning adults we should expect better recruitment when suitable spawning conditions occur" says Jolley. For example, if the 15 crappie creel limit was in place during the last 5 years, 8,375 crappie would have been conserved in Chickamauga Reservoir alone. "Although that doesn't sound like a lot, when you consider that a crappie can produce from 10 to 160 thousand eggs, 8,375 adult fish could make a big difference. On reservoirs like Great Falls, Cordell Hull, and Parksville, the benefits should be even more significant."

"It is important for anglers to keep in mind that some Tennessee crappie fisheries are limited in their potential because of factors such as reservoir fertility, water level fluctuations, and environmental conditions which cannot be controlled by TWRA or the angling public" says Scholten. "Some of these fisheries, such as Center Hill, Dale Hollow, Normandy, and Tims Ford are maintained by stocking and others could stand to benefit from stocking if we could produce more fish. Unfortunately, hatchery space is limited so we have no choice but to make do with what we have for now. Regardless of whether they are stocked or not, we cannot expect these fisheries to sustain the amount of fishing pressure that is allowed under the current 30 per day creel limit. Although the reduced creel limit will probably not result in a substantial increase in harvest, we hope it will prevent further declines so there will still be fisheries around for future generations."

Many east Tennessee reservoirs already have a 15 per day creel limit for crappie. The TWRA and many local anglers feel that the reduced creel limits have had positive results on these crappie populations. "In 2000 we proposed the 15 per day crappie limit for Dale Hollow and Center Hill for many of the same reasons- recruitment was low and catch trends were declining" says Jolley. "We feel the reduced creel limit has resulted in more consistent harvest and anglers have expressed nothing but support for this change." In 2001 the 15 per day creel limit was enacted on 5 other reservoirs that were experiencing declining catch trends and low recruitment. "Since then, crappie catch and harvest have rebounded" says Doug Peterson, Region 4 Biologist for TWRA (see Figure 2). "For example, on Douglas catch rates have more than doubled since 2001 and in 2003 TWRA's catch of young-of-year crappie was the highest on record." Peterson cautions that there were natural and other man induced factors (April lake levels, stocking, habitat improvements) that likely played a role in the Douglas crappie rebound but overall "the reduction in creel has had a positive outcome on the crappie population."

The TWRA reminds anglers that they can still catch and release as many crappie as they want. "If anglers really want to take home more than 15 crappie a day, they can always take a kid fishing" says Scholten. "That would double the number of fish that they could put in the freezer plus it would make the kid's day."

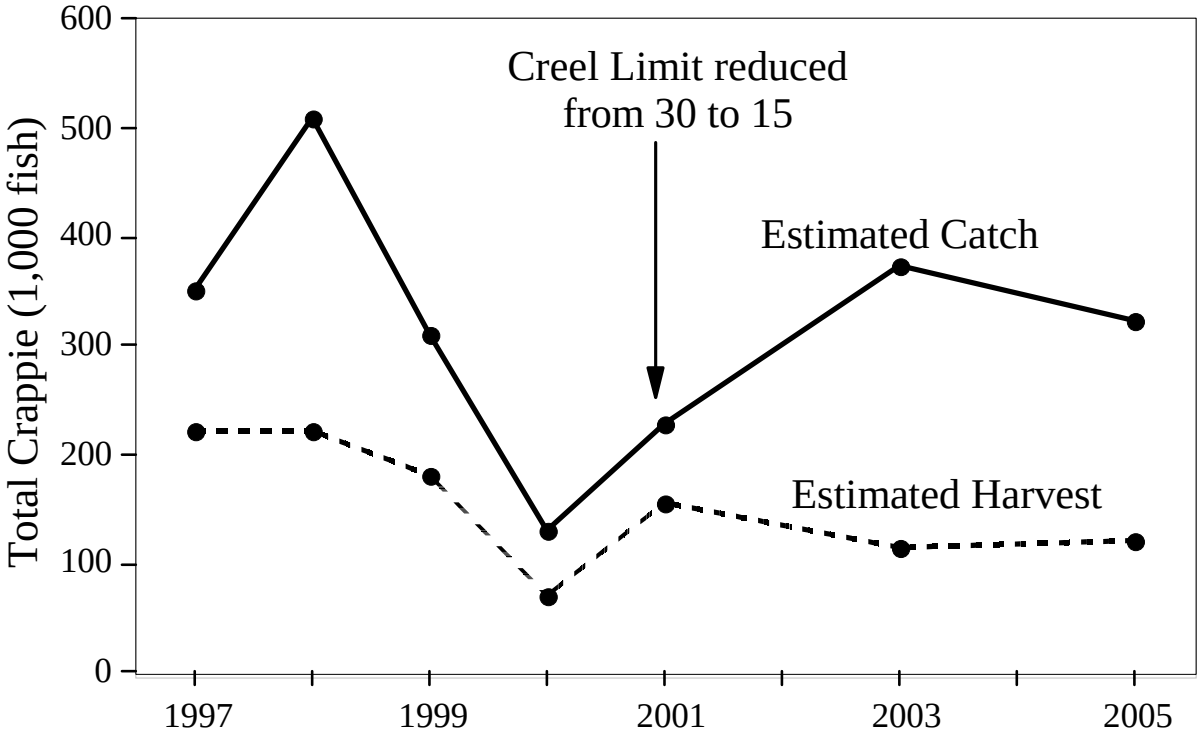

Figure 2. Douglas reservoir estimated crappie catch and harvest from TWRA's annual creel survey data.

Table 2. Historic changes in the statewide crappie regulations (does not include exceptions to statewide regulations).

Year	Statewide Crappie Regulations
1949	20 per day creel limit and no fishing from April 1 through May 29
1959	30 per day creel limit
1962	No creel limit
1989	30 per day creel limit
1997	30 per day creel limit and 10” minimum size limit

Table 1. Current, proposed, and tentative (if proposal is enacted as is) crappie creel limits for Tennessee reservoirs.

Reservoir	Current Crappie Creel Limit	Proposed Crappie Creel Limit	Tentative Crappie Creel Limit
Barkley	30	No Change	30
Boone	15	No Change	15
Calderwood	30	15	15
Center Hill	15	No Change	15
Cheatham	30	No Change	30
Cherokee	15	No Change	15
Chickamauga	30	15	15
Chilhowee	30	15	15
Cordell Hull	30	15	15
Dale Hollow	15	No Change	15
Davy Crocket	30	No Change	30
Douglas	15	No Change	15
Ft. Loudoun	30	15	15
Ft. Patrick Henry	15	No Change	15
Great Falls	30	15	15
Guntersville	30	No Change	30
J. Percy Priest	30	No Change	30
John Sevier	15	No Change	15
Kentucky	30	No Change	30
Melton Hill	30	15	15
Nickajack	30	15	15
Normandy	30	15	15
Norris	10	No Change	10
Old Hickory	30	No Change	30
Parksville	30	15	15
Pickwick	30	No Change	30
Reelfoot L.	30	No Change	30
South Holston	15	No Change	15
Tellico	30	15	15
Tims Ford	30	15	15
Watauga	15	No Change	15
Watts Bar	30	15	15
Woods	30	15	15